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Specific strategies for a more efficient individual study

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Abstract

The present paper belongs to the field of university didactics, and it is directed mostly to professors delivering courses and seminars, but, at the same time, to students. The paper is structured into five logically organised sections, each section operationalizing and exemplifying the key syntagms on which the present study focuses. In what follows, we will analyse the traditional strategies of intellectual activity, or those that have already been acknowledged, and we will make reference to the modern ones that we recommend for the formation and development of the student's competence of individual study, for the development of his intellectual activity, and implicitly, for stimulating the achievement of good performance in school. In order to organise learning situations in which moments of individual study, but also debates, reflections, etc. predominate, we mention that the strategies of individual study and the techniques of intellectual activity are carefully selected by the professor.There is a category of students who can learn these strategies implicitly, another category of students who deduce them by reflecting upon their own cognitive style, but there are groups of students who do not acquire them, or who deduce counter-productive strategies. For these situations, interventions for the development of efficient strategies of intellectual activity (according to the student's personal learning style) are proven to be very useful. Even though the strategies of intellectual activity are mostly specific to the field of study, there is knowledge and relevant skills which can be transferable for the development of strategies of intellectual activity. Superior strategies of intellectual activity involve the elaboration, organisation and understanding or processing of the information. Such a strategy of intellectual activity is suggested to students in the present paper, in order to contribute to the efficient processing of information, to the quick assimilation of knowledge. We have built this strategy by starting from the competence of individual study that we wish to form and develop in students. By trying to form and develop this competence, we have identified the specific sub-competences, and, starting from these, we have imagined, in a critical, operational manner, a complex intellectual procedure, elaborated in the manner of a strategy of intellectual activity which we have called *Grid for the explanation of content* (GEC).

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Keywords: intellectual activity; individual study; students; techniques of intellectual activity.

1. The intellectual activity – introductive considerations

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In the present paper we will first define the intellectual activity, the techniques of intellectual activity, and the style of intellectual activity. We believe it is important that we analyse some of the traditional techniques of intellectual activity that are used during courses and seminars, techniques which aim at a 'superficial' approach of the text. We will likewise pay a special attention to the modern techniques of intellectual activity, techniques which aim rather at the comprehension of the text.

The techniques of intellectual activity are considered to be the instruments which help us gather and process information belonging to various fields of knowledge. However, intellectual activity is based not only on the assimilation of this information, but also on its connection to information previously assimilated, and its transfer towards other fields. It consists of intellectual rearrangement and complex cognitive investments. Moreover, through type of intellectual activity we understand the specific, personal, particular manner in which an individual employs and develops methods and techniques of intellectual activity, improving his/her cognitive and meta-cognitive capacities.

2. Traditional techniques of intellectual activity

In what concerns the approach students have towards studying for courses and seminars, this refers to the superficial or the in-depth processing of the material. If the professor is able to contribute in encouraging an in-depth processing of the material (through the material and the style of teaching), it is, however, the student who must eventually assume a personal approach towards studying and learning, which will result in a deeper implication and a monitoring of progress. Stimulating an in-depth approach may also be realised through various learning activities to which the student is exposed. The educator stimulates the student so that, even from the area of content, the student should acquire both learning methods and knowledge belonging to the field of study. Encouraging the student to think of what has been taught might coincide with encouraging the student to think of methods for studying; thinking can be stimulated through the approach the student assumes regarding the newly-built knowledge, knowledge monitored within his/her own cognitive schema.

For the organisation of courses and seminars with students where moments of individual study, debates, reflections etc. should prevail, the professor carefully suggests strategies for individual study and techniques of intellectual activity. In the following pages we will analyse the already acknowledged strategies, while also making reference to the modern ones.

The traditional, efficient techniques of intellectual activity, often employed during courses and seminars, are: the scientific reading (efficient, quick, active), note-taking, annotations, reading the notes, the consultation of bibliography, the composition of a plan of ideas, summaries and abstracts, essays, research projects etc.

Scientific reading**,** efficient, quick, performed at courses and seminars, is distinguishable through the fact that it is: selective – insomuch as it is carried out by force of some predetermined objectives, to whom it circumscribes the whole process; systematic – insomuch as it draws on strategies, techniques, and specific procedures; formatively-creative – insomuch as the information assimilated during the reading is restructured into new, original forms; critically-evaluative – through the compulsion of interpreting, explaining, and confronting what is read with other points of view.

Scientific reading is carried out in two stages: superficial reading, and in-depth reading. Bernat (2003) discusses the existence of "quick reading" with its two implications: "pre-reading, and accelerated reading". During the process of pre-reading, there are three styles which can be used individually, combined, or integrated: scanning – through the identification of the title, of the table of contents, of the subtitle, of the index; the identification of key words – represents the determination of the most important words within the text; diagonal reading – represents the review of important parts of the material.

When preparing for school, the student must first read the text and the notes, but also other publications (handbooks, guidebooks, dictionaries, and anthologies). School preparation begins with the careful reading of the text, then ensuing the resort to complementary sources, with the following amendments: the student must understand the message of the author of the text, the problems raised in that book, he must identify with the characters, solve problematic situations, appreciate or criticise the aesthetic value of the message, identify the work's style, the described judgements, identify what constitutes the work's originality, compare the work to other creations belonging to that author, or to other works that he/she has read etc.

We notice that traditional reading is gradually replaced with electronic reading through the use of the Internet, namely in what concerns access to various books, to articles from libraries across the world. The book is disappearing, and its place is gradually taken by sites, web pages, links etc. whose advantages are incontestable, but whose limits are also debatable.

Note-taking – traditional technique of intellectual activity.

Annotations, highlights, abbreviations, contractions, diagrams, numberings are very important for the intellectual activity. Note-taking is usually performed simultaneously with the reading. When a material is being read, key words can be marked directly on the text (when the book or the material belong to the reader) by underlining them with a graphic pencil, or with coloured pencils or markers. If the notes are taken on separate sheets, then the key words can be marked with capital letters, with small letters, with italic or bold fonts, with type-writing styles, with circles etc. Numberings are most often employed for classifications, making use of the capital and small letters of the alphabet, A, A.a. etc., or of the Roman or the Arabic numerals, I, II, III, or 1, 2, 3, or I, I.1. etc. Diagrams are extremely helpful, making use of arrows, drawings etc. During seminars and courses, one can make use of modern systems of note-taking, among which the Cornell system.

3. Modern techniques of intellectual activity carried out at courses and seminars

Recent evolutions in cognitive psychology have had a considerable impact upon the manner in which students perceive knowledge acquirement, and the way knowledge is stored within the memory. The most important aspect of these evolutions is constituted by the identification of the **structured and organised character of knowledge inside the memory.** Knowledge acquired at courses and seminars seems to be structured by students according to its meaning, which amplifies and changes with time; the manner in which knowledge is stored is tied to the way in which it is codified when studied (Romberg & Carpenter, 1986). New knowledge is constructed by the student, in a process of formation of new relations essential to studying (Resnick & Ford, 1981, apud. Entwistle & Ramsden, 1983).

In a research program concerning the manner in which students learn, the authors (Entwistle & Ramsden, 1983) have come to the conclusion that there are two approaches that students assume with regard to their way of learning. Some students assume a superficial approach, and tend to be more preoccupied by the learning of words, by memorising, while others assume an in-depth approach and are more preoccupied by understanding the knowledge, wishing to perceive the ideas behind the words (Marton & Saljo, 1976, apud Entwistle & Ramsden, 1983). We mention here the fact that assuming a certain teaching method or strategy by the professor might influence students to assume superficial or in-depth approaches (Ramsden, 1982, Entwistle & Ramsden, 1983). Therefore, manners of approaching study can be modified. Appropriate interventions on the professor's side, such as conducting assignments during the course and the seminar, the directions provided, can influence the depth of the learning process (Biggs & Rihn, 1984, Ballstaedt & Mandl, 1985, apud. Entwistle & Ramsden, 1983). Students relying on the reproduction of received information allow professors to define learning assignments, while students searching to understand meaning interact critically with what they study (Entwistle & Ramsden, 1983). The educator's responsibility resides in ensuring that the student has, during the seminar, the opportunity to think, to reflect for an in-depth approach of the content.

The following techniques of intellectual activity are used during courses and seminars by students from all specialties in universities:

Structuring the information into units. Taking into consideration the magical number of 7 units which can be studied, students group their memorising items so as to raise their number gradually. Grouped in this manner, the information in the units can be easily stored.

The technique of places. It is recommended in the situations when the student must learn a succession of arbitrary items (words with no connection). The one who studies is advised to imagine taking a walk inside his/her own house, and to associate a place with each word, concept, idea to be memorised.

Memorising data through the visual, auditory, tactile or kinaesthetic technique. Every student manifests a predilection towards a certain manner of memorisation. Some might verbalise more easily what they have memorised, others might make auditory associations etc. In each case a different memorising technique is used.

The 'funnel' technique. This process suggests that during the learning effort we must start from general ideas and arrive at details. Lists and conceptual maps are built by following the same principle.

Acronyms. They stand for grouping the initials of the words to be memorised, so as to form words with meaning.

Numeric correspondences with rhyme. This process is recommended for the memorisation of a list of words (the stages in the development of a phenomenon, the components of a mechanism by order of their importance etc.).

Graphic organisers allow the structured presentation of the information in various ways: by comparison, by sequence, by cause-effect, by structures of the type problem-solution.

The strategy of active contextual reading is based on the existence of models of active, participative reading, the valorisation of the procedural mechanisms from the theories of study applicable to reading, the knowledge and the valorisation of the main criteria of efficiency in the didactics of reading organisation.

The SPIR technique consists, mainly, of the following steps: Survey – perceptive-mental perusal, with a general approach towards the text, Preview – anticipated pre-selection of aspects of interest, Inview – in-depth regard inside the text, Review – revision.

The APASE technique – is based on A – the initial training, the warming-up for reading, Planning – contriving the reading plan, with the determination of primary objectives, of the allocated time, and of the main techniques, A – adaptation, based on the determination of the message transmitted by the text, the elaboration of a plan of ideas, the presentation of arguments for sustaining ideas, S – active study, summarising the theme or the important passages of the text, E – evaluation by reconsidering the plan, disclosing the experience gained through the reading of the text.

The method of the text critique consists of the following stages: preparing for reading, careful reading, clarification of the problem by personal effort, emphasis and explanation of the conceptual organisation, in-depth study of the text, formulating a conclusion of the type innovative summary.

The technique of reading with composition of written text is based on the blending of the individual study technique with the technique of studying by taking notes or by composing a summary-type of text. The stages of this method are: a) reading the text and contextualising it, b) identifying the main ideas, c) generating relevant ideas and retelling the text in a personal manner, d) formulating, by personal construction, the text's significations, e) evaluating the text, f) revising the text.

4. Grid for the explanation of content – a complex strategy of intellectual activity

In college, unlike in high school, students process an ever increasing amount of information, and operate with it at a more and more abstract level. This requires the use of more and more complex strategies of studying at courses and seminars. As they develop intellectually, students become more conscious of the characteristics of their own cognitive processes, and gather more knowledge about cognition in general. If the student is aware of them and employs them efficiently, these acquisitions will facilitate and improve the formation of the competence of individual study. It is such a strategy of intellectual activity that we suggest in order to contribute in the efficient processing of information, in the quick assimilation of knowledge. We have built this strategy by starting from the competence of individual study that we wish to form and develop in students. By trying to form and develop this competence, we have identified the specific sub-competences and, starting from these, we have imagined, in a critical, operational manner, a complex intellectual procedure, elaborated in the manner of a strategy of intellectual activity:

Table 1. Grid for the explanation of content

Stage	Intellectual procedure
1	Identify *the key words, concepts, phrases* and define them.
2	Establish *connections* and *subordinations* between them, but also with previous knowledge, making use of graphic models, diagrams, figures.
3	Analyse the new content, by making: *characterisations, explanations,* pointing out its *importance* from a theoretical and applicative perspective.
4	Ask yourselves *questions* regarding the content, *reflect* upon it.
5	Give *personal opinions* regarding the efficient ways of learning the content.
6	*Essentialize (summarise)* the content, and take notes according to the Cornell note-taking system.

The theoretical paradigm in which our procedure is situated is that of cognitive psychology with its didactic implications. Through the grid of analysis-comprehension of the content to be used during courses and seminars with students, we suggest, in fact, didactic ways of cognitive development in students, whose efficiency is of course supported by our recourse to consecrated studies of constructivist and cognitive psychology (Piaget, Vîgotski, Bruner, Sternberg, Feuerstein, Fischer, Gardner).

The conceptual, actional, and methodological elements which compose the grid are: algorithms, key phrases, concepts, terms, representations, connections, cognitive organisers, analyses, reflections, meta-cognition, summarising, note-taking.

Since we find ourselves in the field of cognitive constructivism, we mention that in the grid prevail internal individual construction, and internal processes of refinement, interpretation, and understanding. These processes lead to integration in cognitive schemas and structures, which in their turn enhance understanding.

The first step in approaching the content is the noting down of the important terms or phrases, terms which practically compile the framework of that particular text. With the aid of these words connections and subordinations are realised between elements belonging to the new knowledge, but also to previous knowledge.

Elaborating new knowledge is based on the use of previous knowledge in order to analyse and understand the new content, but also on linking new knowledge with the one already stored. Organising knowledge during this stage is based on grouping the linked information into structures, schemes, schematising the content according to the relation between ideas, graphically representing the content through cognitive organisers.

Charts, graphs, diagrams offer the possibility of presenting information in a shortened manner, and they are arranged in the page in such a way as to express the logical connection between ideas more through page layout, than through syntax. The cognitive organisers' ability to ensure structural organisation for conceptual fields is their strong attribute. A diagram within a text highlights the concepts of that particular content, and becomes a suggestive means which directs the attention in a certain manner.

Obviously, each student structures his/her knowledge personally and uniquely. By using this method, the professor only offers necessary explanations, prepares the students' research, facilitates, guides, stimulates. The professor only complements, amplifies, and develops cognitive constructions. His/her role is that of creating learning contexts, and the student mentally operates upon them, manipulates them.

The suggested procedure leads to the comprehension of information and knowledge, of significations, interiorising them as cognitive representations and schemas, but also to the solving of cognitive conflicts. Thus is generated the cognitive construction, and thus take place the information processing, the reflection process, the stabilisation and clarification of controversies. The student examines the tasks, questions them, analyses them etc. Besides, this process also consists of critically treating or analysing the material through the formulation of questions with a clarifying purpose, and through the creation of moments of reflection upon the newly-elaborated knowledge. Reflection is considered, in the studies concerning the functionality of meta-cognition, an essential activity in performing meta-cognitive undertakings, and a fundamental quality of the performance thinker (Leat & Lin, 2002, Kriewaldt, 2001, Ertmer & Newby, 1996).

The next step is constituted by the statement of a personal opinion regarding the efficient ways of learning, of studying the content. **Meta-cognitive knowledge** thus integrates the knowledge of the student with experience in learning activities, in what concerns cognition, to the manner in which information is worked upon, its comprehension. We mention here that Flavell (1979) discusses about **meta-cognitive knowledge with regard to strategies**. We refer here to the knowledge concerning various cognitive strategies that the students can use for the efficient completion of a learning task. The meta-cognitive knowledge that students possess concerning these strategies refers to their efficiency and the implications of their usage, to the manner and the conditions of their effective application, but also to the reasons why they function efficiently in some situations, and less efficiently in others. Of course, we will also take into consideration here the knowledge concerning various **meta-cognitive strategies**, which can be useful to students in **planning, monitoring** (e.g. formulating questions), and **controlling** their own learning. Moreover, in this context we are also interested in the manner in which meta-cognitive knowledge is used for managing one's own intellectual activity. We have inserted this essential point in the suggested grid, because recent studies (Gama, 2001, Blakey & Spence, 1990) prove the fact that subjects conscious of their own meta-cognitive processes are more efficient in learning. Of course, for understanding the cognitive

undertaking that he/she has followed in his/her approach towards the content, the student must verbalise how exactly he has acted, what meta-cognitive strategies he has employed, thus evaluating their efficiency.

For the cognitive undertaking to be complete and complex, all the aspects shall be noted down by the students during the course or the seminar by using the Cornell note-taking system, system which facilitates the formation of the sub-competence of taking notes systematically, in an organised, structured manner, developing the competence of individual study and, of course, visibly contributing to the increase in the students' school performances.

5. Conclusions

Students are very different in what concerns the cognitive structures they possess, and in what concerns the cognitive strategies they apply during courses and seminars. Through the procedure suggested by the grid, the new content can be learned, being understood, since the student can logically connect the content of the already existent cognitive structures. Understanding knowledge is an activity of a constructive nature, realised by the student through recourse to cognitive strategies.

By studying during courses and seminars with the help of the suggested grid, and by taking notes by using the Cornell system, students establish their own mental systems, their own models of processing the information, an individual cognitive style, because the student formulates questions, hypotheses, ideas, schemes, and proposes projects, blocks of knowledge, abilities. Thus, during courses and seminars students organise and realise cognitive experiences, engage actively in mechanisms of understanding, interiorise, reflect, formulate, correlate, by taking notes.

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